

TIA 2015 PLAYBOOK

**An overview of the ICT market,
technologies, and policies that drive
innovation and investment**



ADVANCING GLOBAL COMMUNICATIONS



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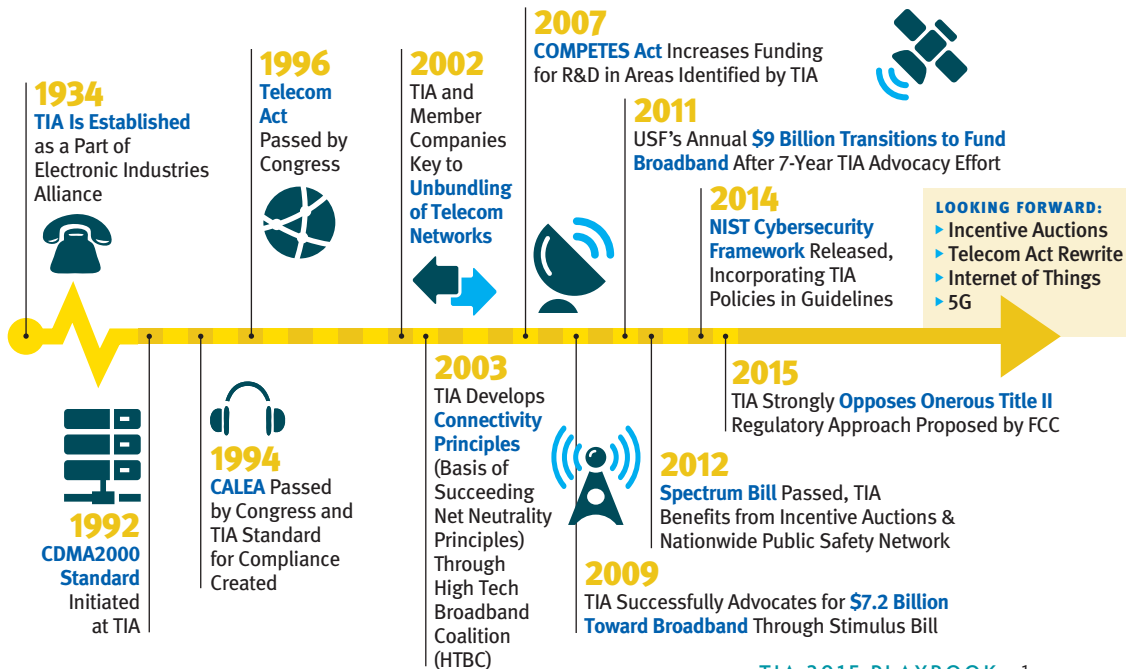
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TIA Timeline





Innovation Drives Jobs and Economic Growth

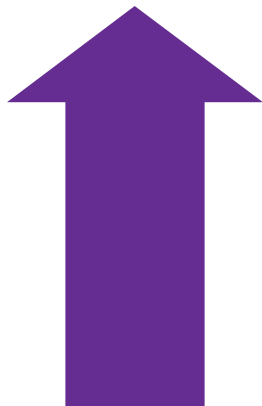
- ▶ **ICT COMPANIES ACCOUNTED** for 3.5 million jobs, with average compensation for ICT workers more than 80 percent higher than for the workforce overall.
- ▶ **ICT FIRMS CONTRIBUTE** about \$1 trillion to the U.S. GDP through both direct and indirect contributions — about 7 percent of the U.S. economy.
- ▶ **ICT'S DIRECT CONTRIBUTIONS** to GDP have increased nearly 25 percent since the 1990s, growing from 3.4 percent per year in 1991–1993 to an average of 4.2 percent per year in 2005–2009 — gains unmatched by any other industry.
- ▶ **THE USE OF ICT INCREASES THE PRODUCTIVITY OF THE BROADER U.S. ECONOMY.** Firms that use ICT effectively grow faster, invest more, and are more productive and profitable. According to the World Bank, businesses that use ICT effectively have 3.4 percent higher sales growth and 5.1 percent more profitability than businesses that do not.



TIA Innovation Agenda

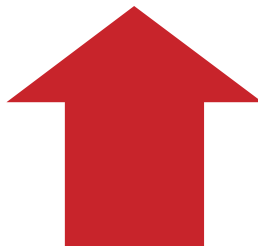
DRIVE INVESTMENT THROUGH:

- ▶ Internet Ecosystem [4]
- ▶ Broadband [5]
- ▶ Spectrum Availability [8]



ACCELERATE GLOBAL COMPETITIVENESS THROUGH:

- ▶ Market Access and Trade [9]
- ▶ Standards and Intellectual Property Rights [12]
- ▶ Device Approval [13]
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ENABLE FORWARD-LOOKING TECHNOLOGIES WITH:

- ▶ Tax Reform [17]
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- ▶ Global Cybersecurity [20]
- ▶ Green ICT and Smart Grid [21]
- ▶ Intelligent Transportation Systems [22]





Internet Ecosystem

GOVERNMENT SHOULD ENSURE UNIFORMITY

as Congress considers a Communications Act legislative re-write, including:

- ▶ **ENDING TECHNOLOGY SILOS** for services to reflect the reality of intermodal competition;
- ▶ **PROMOTING COMPETITION** with rules that encourage competition among existing and emerging platforms and providers;
- ▶ **TECHNOLOGY NEUTRALITY**, with rules focused on the services performed, not the tools used to do so; and
- ▶ **EXCLUSIVE FEDERAL JURISDICTION** for IP-services.

CONSUMERS' ABILITY TO CONNECT to and access content and services over the Internet should be preserved:

- ▶ **NET NEUTRALITY PRINCIPLES** adopted by the FCC a decade ago have proven effective;
- ▶ **LIGHT TOUCH REGULATION** has fostered innovation, broadband deployment, competition, and investment; and
- ▶ **HEAVY HANDED UTILITY STYLE REGULATION** of broadband service providers is not necessary and stifles innovation.

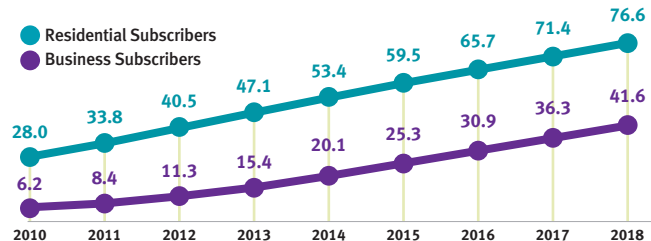
Broadband Goals & IP Transition

THE IP TRANSITION IS ONGOING. TIA calls on the Administration, Congress, and other government bodies to adopt a framework for next-generation broadband that supports the following:

- ▶ **UNIVERSALLY AVAILABLE**, high-quality, and affordable broadband connectivity for rural and hard-to-serve places, using public universal service funding where necessary.
- ▶ **ENCOURAGING INVESTMENT** in network infrastructure, allowing the market to reflect consumer choice, and accelerating broadband user access speeds.
- ▶ **LIGHT-TOUCH, MARKET-BASED REGULATIONS** as well as certainty in the marketplace will ensure continued investment in a technology-neutral manner.
- ▶ **TECHNOLOGY MANDATES** by the government hamstringing innovation and increase consumer costs.

VoIP Share of Residential and Business Telephone Lines in the U.S. (Millions)

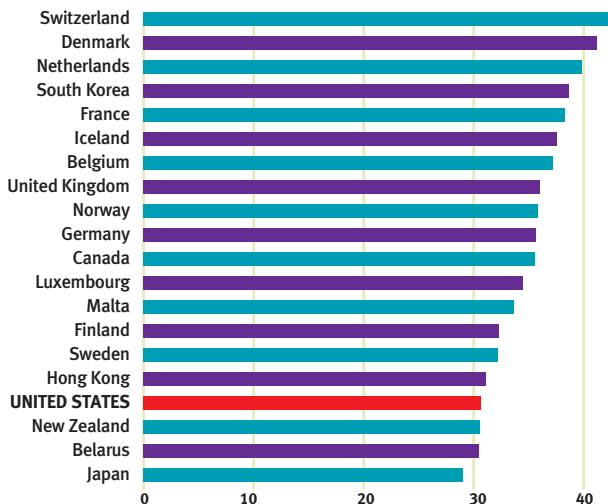
Source: TIA's 2015-2018 ICT Market Review and Forecast



Broadband Penetration

Broadband Penetration of the Population, 2014 (Percent)

Source: TIA's 2015-2018 ICT Market Review and Forecast



THE U.S. CONTINUES TO LAG BEHIND OTHER DEVELOPED NATIONS in broadband penetration.

▶ **ALTHOUGH PENETRATION ROSE TO 30.73 PERCENT IN 2014**, topping 30 percent for the first time, its 17th ranking remained the same as in 2013.

▶ **THE U.S. MUST NOT BE OUTPACED** by major trading partners in deployment of cutting-edge technologies and networks.

▶ **LACK OF BROADBAND CONNECTIVITY** inhibits job creation in the U.S.

Infrastructure Spending

THROUGH ECONOMIC AND REGULATORY INCENTIVES for network deployments and upgrades, the U.S. Government can stimulate investment in next-generation broadband infrastructure.

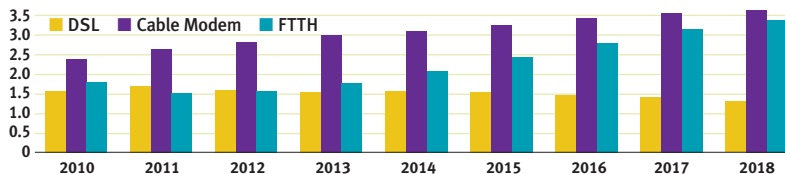
► **THE U.S. MUST ENACT PERMANENT TAX INCENTIVES FOR INNOVATION**, which will allow companies to make long-term research plans while being assured that the incentives will continue for the life of the project.

► **TAX POLICIES SHOULD BE IMPLEMENTED THAT WILL DRIVE INVESTMENT IN BROADBAND** through tiered tax incentives that accelerate as the speed offered by such service increases, recognizing differing tiers and floors depending on the technology deployed.

► **THE U.S. MUST CONNECT STUDENTS AND LIBRARY USERS** to the benefits of more robust broadband by increasing technological flexibility for E-rate program participants, coupled with greater incentives for efficient and economical investment decisions.

Access Infrastructure Equipment Spending in the U.S. by Category (\$ Billions)

Source: TIA's 2015-2018 ICT Market Review and Forecast



Cable is the principal fixed broadband access platform but fiber-to-the-home is rapidly catching up. By 2018 there will be nearly as many FTTH subscribers as cable modem subscribers.

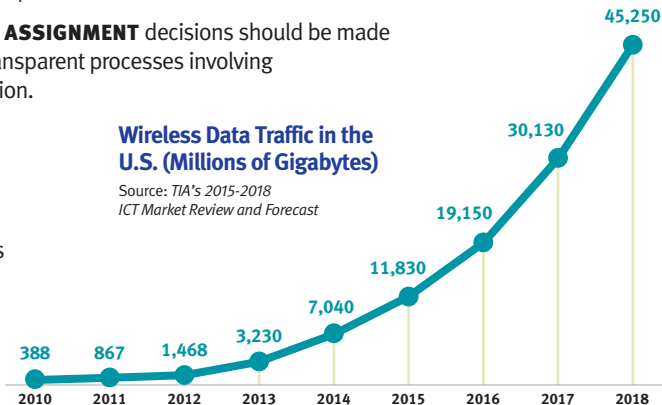
Spectrum Availability and Management

GOVERNMENT SHOULD ADOPT FORWARD-LOOKING, market-oriented spectrum policies, including further reallocations of federal spectrum for mobile broadband services, flexible regulations, and improved spectrum management.

- ▶ **BUDGETARY INCENTIVES AND A LONG-TERM PLAN** that supports predictability and a stable regulatory environment for commercial and government uses will encourage more efficient use of spectrum.
- ▶ **SPECTRUM ALLOCATION AND ASSIGNMENT** decisions should be made by market-driven, open, and transparent processes involving government/industry consultation.
- ▶ **THE VOLUNTARY INCENTIVE AUCTION** should maximize the amount of spectrum available for licensed mobile services, and the FCC should continue its efforts to attract the greatest possible number of broadcast participants.

Wireless Data Traffic in the U.S. (Millions of Gigabytes)

Source: TIA's 2015-2018
ICT Market Review and Forecast



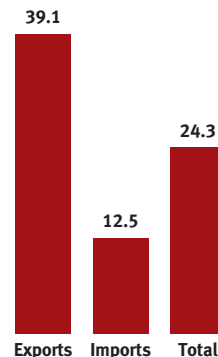
Market Access and Trade

MARKET ACCESS AND TRADE — Securing access to international markets can be achieved by promoting trade liberalization and policies that are market-based and technology-neutral.

- ▶ **ENHANCING TRADE LIBERALIZATION AND EXPANDING TRADE** can be achieved in 2015 by prioritizing the conclusion or advancement of ongoing trade negotiations and Congressional renewal of Trade Promotion Authority. Bilateral mutual recognition agreements (MRAs) for testing and certification of telecom equipment will help improve the regulatory environment.
- ▶ **IMPROVING MARKET ACCESS** can be accomplished through trade agreements that recognize the inherently global nature of digital trade and ICT supply chains; ensure technology neutrality; and permit full, fair, and open competition.
- ▶ **AVOIDING PROTECTIONISM AND LOCALIZATION BARRIERS TO TRADE** should be a focus of all governments by honoring existing World Trade Organization commitments and regional or bilateral trade commitments.
- ▶ **ENSURING THE FREE FLOW OF DATA** can be realized by encouraging interoperable regulatory systems that do not unnecessarily impede cross-border data flows and by preserving the multi-stakeholder approach to Internet governance.

FTA Shares of U.S. Telecommunications Equipment Trade, 2013 (Percent)

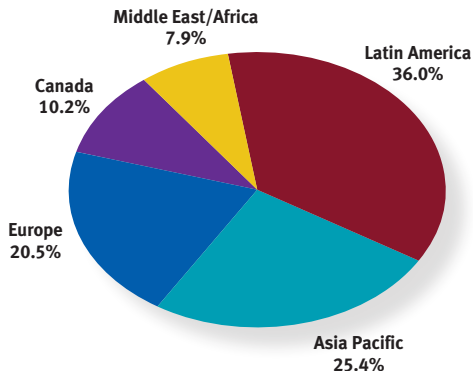
Source: TIA's 2015-2018 ICT Market Review and Forecast



Top Trade Destinations for U.S. Equipment

U.S. Exports of Telecommunications Equipment by Region, 2013

Source: TIA's 2015-2018 ICT Market Review and Forecast



IN 2013, TRADE AGREEMENTS HELPED EXPORTS

of U.S. telecommunications equipment, accounting for 39.1 percent of exports while comprising only 12.5 percent of non-U.S. gross domestic product.

- ▶ **IN 2013, LATIN AMERICA WAS THE LARGEST MARKET** for U.S. equipment exports, followed by Asia Pacific and Europe.
- ▶ **IN 2013, THE TOP 10 EXPORT DESTINATIONS COMPRISED 55.5 PERCENT** of all U.S. telecommunications equipment exports, accounting for \$10.5 billion in telecommunications equipment purchases from the United States.
- ▶ **MEXICO WAS THE LEADING DESTINATION** for the export of American telecommunications equipment in 2013, accounting for \$2.7 billion, up 10 percent from 2011.

Global Market Snapshot

► THE GLOBAL MARKET

WILL GROW at an estimated 4.6 percent compound annual rate to \$4.9 trillion by 2018.

► THE TWO LARGEST REGIONAL

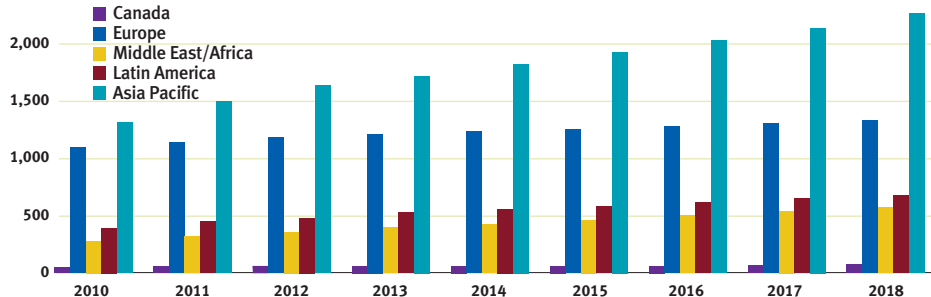
TELECOMMUNICATIONS MARKETS in 2014 were the Asia Pacific at \$1.8 trillion and Europe at \$1.2 trillion. The Middle East/Africa will be the fastest-growing region, with a projected 7.6 percent compound annual increase through 2018.

► THE TWO LARGEST

WIRELESS MARKETS in 2014 were China with 1.3 billion subscribers and India with 910 million subscribers, projected to reach 1.55 and 1.24 billion, respectively, by 2018.

International Telecommunications Revenue by Region (\$ Billions)

Source: TIA's 2015-2018 ICT Market Review and Forecast

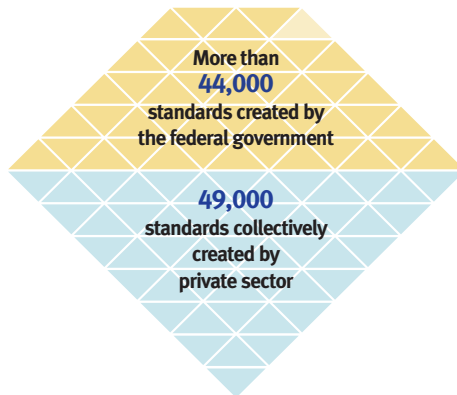


Standards and Intellectual Property Rights

RELIANCE ON THE VOLUNTARY, OPEN, AND CONSENSUS-BASED STANDARDS PROCESS,

which includes the protection of intellectual property rights (IPR), is key to enhancing the global competitiveness of the ICT industry.

- ▶ **VOLUNTARY, CONSENSUS-BASED STANDARDS ARE A CRITICAL ELEMENT FOR INNOVATION** and the continued commercial success of the ICT sector, which should be supported by all governments.
- ▶ **OPEN STANDARDS** are developed and maintained using consensus-based and transparent processes and are available to the public at a reasonable cost (either for a reasonable fee or for free). Open standards should not be subject to mandated licensing without compensation.
- ▶ **INTERNATIONAL STANDARDS** are any standards developed through an open, transparent process and are widely implemented on a global basis.



**700 organizations have developed
a total of 93,000 standards
between the federal government
and private sector.**

Source: NIST Special Publication 806, Standards Activities of Organizations in the United States

Improving the Device Approval Process

The FCC now processes 16,000 equipment authorizations a year, an increase of 400% over the last decade.



2002



2012

Source: Statement of FCC Commissioner Jessica Rosenworcel (September 2013) http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-323243A1.pdf

- ▶ **INCREASING CERTAINTY AND EFFICIENCIES IN DEVICE APPROVAL PROCESSES** must be a continuous exercise that includes proactive and open dialogue with affected stakeholders.
- ▶ **POLICYMAKERS SHOULD UTILIZE ADVANCED APPROACHES TO THE REGULATION OF ICT**, such as the allowance of electronic labeling, reduced import restrictions, and the use of a self-declaring certification regime.
- ▶ **GOVERNMENT SHOULD RELY ON INTERNATIONAL STANDARDS AND STRIVE FOR GLOBAL HARMONIZATION OF TECHNICAL REQUIREMENTS** based on these standards, to ensure that technical compliance will maximize the widespread international availability of ICT equipment at competitive prices.

Accessibility

INCREASING ACCESSIBILITY TO ICT PRODUCTS AND SERVICES IS A PRIORITY FOR ICT MANUFACTURERS, accomplished through pro-competitive policies, proactive outreach to the disability community, and the use of voluntary, consensus-based standards.

- ▶ **GOVERNMENT SHOULD ADOPT PRO-COMPETITIVE ACCESSIBILITY POLICIES** that encourage marketplace solutions and rapid deployment of accessible technologies while incorporating technical feasibility.
- ▶ **PROACTIVE CONSULTATIONS WITH THE DISABILITY COMMUNITY** and other stakeholders will lead to the incorporation of accessibility solutions into the product development process.
- ▶ **GOVERNMENT SHOULD PROMOTE THE DEVELOPMENT OF VOLUNTARY, CONSENSUS-BASED INDUSTRY STANDARDS** to address accessibility needs, repeating successes such as the TIA-1083 voluntary standard, which reduces magnetic interference on digital cordless phones for users with hearing aids.



15 percent of the world's population lives with a disability. This represents about 1 billion people globally.

Source: International Telecommunication Union (ITU), *The ICT Opportunity for a Disability-Inclusive Development Framework* (September 2013)

Public Safety Communications

The National Public Safety Network:

Nearly 100,000
new jobs created



Source: *The Contributions of Information and Communication Technologies To American Growth, Productivity, Jobs and Prosperity* (2011)

A NATIONWIDE INTEROPERABLE PUBLIC SAFETY BROADBAND NETWORK

will give emergency responders access to new real-time video and data applications that are not currently available.

- ▶ **TIA STRONGLY SUPPORTS** the establishment of, and investment in, a nationwide interoperable public safety broadband network (NPSBN).
- ▶ **PUBLIC INVESTMENT SHOULD REJECT** top-down command and control methods that impede the access of public safety users to the most appropriate technologies for their specific needs. Continued engagement with the full range of public safety stakeholders is essential.

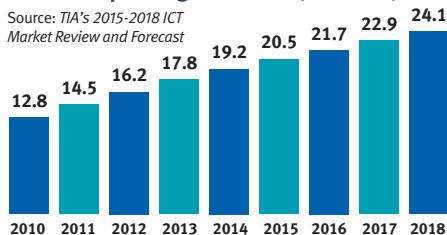
Health ICT

HEALTHCARE SYSTEMS SHOULD FULLY LEVERAGE THE BROAD ARRAY OF SOLUTIONS AVAILABLE IN THE HEALTH ICT ECOSYSTEM, including devices, systems, software applications, and other technologies that store, share, and analyze health information.

▶ **GOVERNMENT POLICIES MUST PROMOTE THE ROLE OF ICTs IN ADVANCING HEALTHCARE**, particularly the harnessing of patient-generated health data from remote monitoring devices and services that improve the quality of care for Americans while reducing costs for patients.

Health IT Spending in the U.S. (\$ Billions)

Source: TIA's 2015-2018 ICT Market Review and Forecast



▶ **GOVERNMENT MUST UTILIZE ALL OPPORTUNITIES TO ENSURE** affordable and reliable access to advanced ICT-enabled services.

▶ **GOVERNMENT POLICIES MUST PROMOTE A REGULATORY FRAMEWORK FOR HEALTHCARE** that provides predictability, facilitates investment, and reduces barriers to innovation.

▶ **GOVERNMENT POLICIES MUST SUPPORT THE ADOPTION OF INTEROPERABLE ELECTRONIC HEALTH RECORDS (EHRs)** and the use of open, voluntary, and consensus-based industry standards for interoperability between medical devices, EHR technologies, and health information exchange systems.

Tax Reform

Impact of a 10 Percent Reduction in Corporate Tax Burden on ICT Investment and Total Capital Investment, by Industry

INDUSTRY	INCREASE IN ICT CAPITAL STOCK (\$ MILLIONS)
Manufacturing	\$9,052
Transportation & Warehousing	\$6,592
Information	\$16,200
Finance & Leisure	\$6,860
Professional, Scientific & Tech Services	\$9,201
Other	\$22,885
TOTAL	\$70,790

Source: *The Contributions of Information and Communication Technologies To American Growth, Productivity, Jobs and Prosperity* (2011)

CONGRESS MUST ENACT CORPORATE TAX REFORM

to enhance U.S. competitiveness; U.S. companies are disadvantaged by the U.S. worldwide tax system and corporate tax rate, now the highest in the world.

► **THE CORPORATE TAX RATE MUST BE REDUCED** to a level that will enhance the international competitiveness of U.S. firms.

► **THE U.S. SHOULD MOVE TOWARD A COMPETITIVE TERRITORIAL TAX SYSTEM** for foreign earnings, which will encourage domestic investment and boost our nation's economy.

► **A ROBUST TAX INCENTIVE FOR INNOVATION** that is permanent, simpler to claim, and supports investments by both large and small businesses must be included in any comprehensive reform.

Research and Development

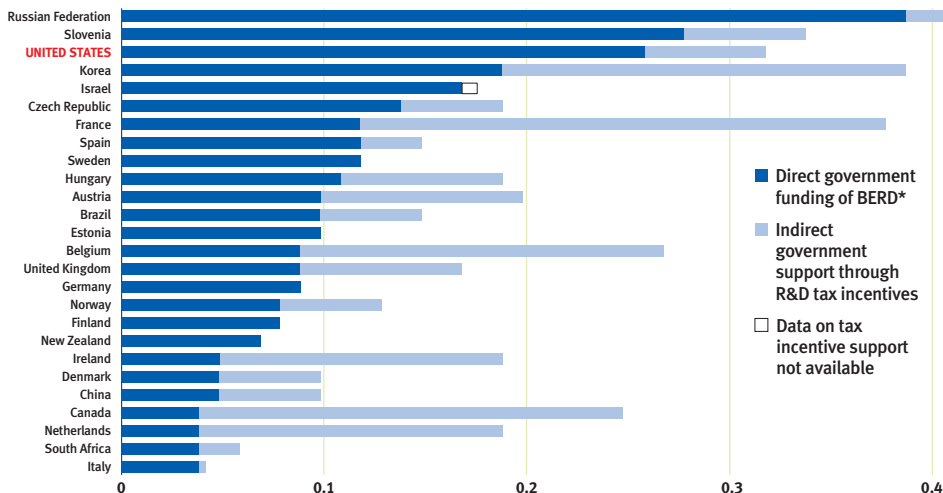
STRATEGIC AND ROBUST U.S. INVESTMENT IN TELECOMMUNICATIONS RESEARCH—including a permanent R&D tax credit, multi-year federal research plans, immigration reform, and **education in science, technology, engineering, and mathematics (STEM)**—will enable the U.S. to remain a technology industry leader.

- ▶ **CONGRESS SHOULD RE-AUTHORIZE** the *America COMPETES Act* in 2015 to increase funding for network- and communications-specific, pre-competitive, basic research.
- ▶ **LONG-TERM COMMUNICATIONS RESEARCH FUNDS** should be directed to key areas including spectrum sharing, universal broadband, and interoperable mobility.

- ▶ **CONGRESS SHOULD UPDATE** the Networking and Information Technology Research and Development (NITRD) Program statute in 2015 to encompass emerging research areas while ensuring that existing funding is not diverted for non-research purposes.
- ▶ **CONGRESS SHOULD ENACT IMMIGRATION REFORM** legislation that increases the H-1B visa cap, enables highly skilled foreign graduates of U.S. universities in STEM fields to receive green cards, and invests in U.S. STEM education.

Research and Development

Direct Government Funding of Business R&D and Tax Incentives for R&D, 2011 (As a percentage of GDP)



Source: OECD Directorate for Science, Technology and Industry STI Scoreboard 2013

*Business Enterprise Expenditures on Research and Development (BERD)

Global Cybersecurity

GOVERNMENT SHOULD WORK WITH INDUSTRY to secure our nation's infrastructure and communications networks using policies that promote communications security as a driver of innovation and enhanced trade.

▶ **NATIONS SHOULD RELY ON INTERNATIONALLY ACCEPTED STANDARDS** and best practices when developing cybersecurity and critical infrastructure protection policies.

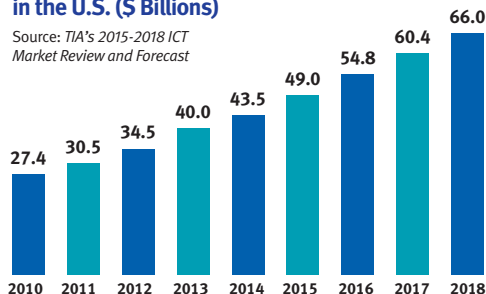
▶ **GOVERNMENT AND INDUSTRY SHOULD LEVERAGE THE PUBLIC-PRIVATE PARTNERSHIP FRAMEWORK** to increase the effectiveness of dialogue between industry and government experts.

▶ **U.S. CONGRESS SHOULD PASS CYBERSECURITY LEGISLATION** that improves bi-directional information sharing, enhanced cyber R&D, *Federal Information Security Management Act (FISMA)* reform, better public awareness through education, and greater public-private collaboration without adding mandates or increased bureaucracy.

▶ **CYBERSECURITY POLICIES** should keep markets open and minimize barriers to trade.

Spending on Cybersecurity in the U.S. (\$ Billions)

Source: TIA's 2015-2018 ICT Market Review and Forecast



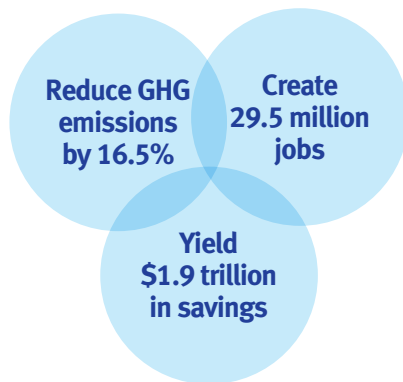
Green ICT and Smart Grid

TIA ENCOURAGES APPROPRIATE FEDERAL-LEVEL POLICIES DRIVING ICT'S POTENTIAL

to reduce energy consumption in other more energy-intensive sectors through smart grid, smart buildings, smart devices, and travel substitution. Substitution of ICT for outdated technologies is key to improving energy efficiency, creating jobs, and helping U.S. industry compete successfully in global markets.

- ▶ **UNLOCK THE FULL POTENTIAL OF THE SMART GRID** through support of R&D and deployment, technology-neutral policies, and private and secure access to energy supply and usage data.
- ▶ **PROMOTE THE ROLE OF ICT** in sustainable technologies that reduce energy consumption and greenhouse gas emissions for new and existing buildings.
- ▶ **SUPPORT VOLUNTARY ICT ENERGY EFFICIENCY STANDARDS** that facilitate greater efficiency gains and avoid mandated standards that prevent innovation and competition.

ICT solutions offer the potential to:



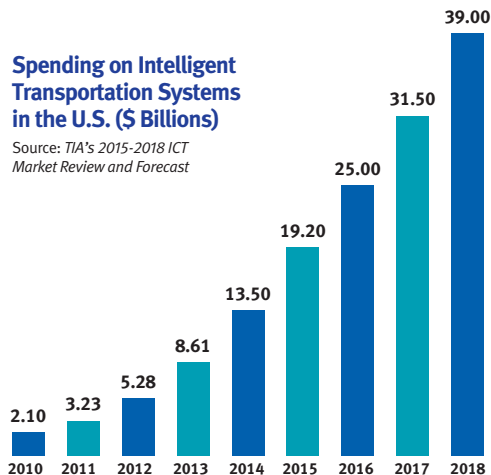
Source: GeSI SMARTer 2020: The Role of ICT in Driving a Sustainable Future (December 2012)

Intelligent Transportation Systems

INTELLIGENT TRANSPORTATION SYSTEMS (ITS) WILL EXPONENTIALLY IMPROVE the efficiency and safety of transportation, and require cautious treatment by policymakers and regulators to ensure that investment and innovation is not discouraged.

Spending on Intelligent Transportation Systems in the U.S. (\$ Billions)

Source: TIA's 2015-2018 ICT Market Review and Forecast



- ▶ **ITS APPLICATIONS INCLUDE** vehicle-to-vehicle, vehicle-to-infrastructure, autonomous vehicles, and many others and represent a nascent but rapidly-developing area of growth for industry.
- ▶ **PRO-INNOVATION AND TECHNOLOGY-NEUTRAL POLICIES** will promote the advancement of ITS and will bring improved efficiency and safety to countless businesses and consumers.
- ▶ **VIALE PUBLIC-PRIVATE PARTNERSHIPS** will make deployment of ITS technologies an appealing investment and ensure sustainability of infrastructure and technological innovation over the long term.

TIA Policy Committees

Public Policy Committee (PPC)

CHAIR: Joyce Mullen, *Dell*

TIA STAFF: Mark Uncapher

Accessibility Working Group (AWG)

CHAIR: Dave Dougall, *BlackBerry Limited*

TIA STAFF: Avonne Bell

Broadband Convergence Working Group (BCWG)

CHAIR: Gary Bolton, *ADTRAN*

TIA STAFF: Mark Uncapher

Cybersecurity Working Group (CWG)

CHAIR: Chuck Powers, *Motorola Solutions*

TIA STAFF: Brian Scarpelli

Energy & Environment Working Group (EEWG)

CHAIR: Mark Sharp, *Panasonic*

TIA STAFF: Avonne Bell

Health IT Working Group (HITWG)

CO-CHAIRS: Robert Jarrin,

Qualcomm

Alice Borelli, *Intel*

TIA STAFF: David Gray

Intelligent Transportation Systems Working Group (ITSWG)

CHAIR: Harry Lightsey,

General Motors

VICE CHAIR: Paul Schomburg,

Panasonic

TIA STAFF: Avonne Bell

Public Safety Communications Working Group (PSCWG)

CHAIR: Jeffrey Marks,

Alcatel-Lucent

TIA STAFF: Mark Uncapher

Spectrum Policy Working Group (SPWG)

CO-CHAIRS: Mary Brown, *Cisco*

Jennifer Warren, *Lockheed*

TIA STAFF: Dileep Srihari

Standards & IPR Policy Committee (SIPC)

CHAIR: Amy Marasco, *Microsoft*

TIA STAFF: Brian Scarpelli

Communication Research Division (CRD)

CHAIR: Adam Drobot,

Open Techworks

VICE CHAIR: Jake MacLeod,

Gray Beards Consulting

TIA STAFF: Dileep Srihari

CTO Council

CO-CHAIRS: Jake MacLeod,

Gray Beards Consulting

Adam Drobot, *Open Techworks*

TIA STAFF: Dileep Srihari

Technical Regulatory Policy Committee (TRPC)

CHAIR: Chuck Eger,

Motorola Mobility

TIA STAFF: Brian Scarpelli

User Premises Equipment Division (UPED)

CHAIR: Fred Lucas, *FAL Associates*

TIA STAFF: Brian Scarpelli

Wireless Communication Division (WCD)

Private Radio Section (PRS)

CHAIR: Chuck Powers,

Motorola Solutions

TIA STAFF: Mark Uncapher

International Committee (IC)

CHAIR: Jennifer Sanford, *Cisco*

TIA STAFF: Brian Scarpelli and

Dileep Srihari

US-India ICT Dialogue

[No Chair, as this is a function of serving a government-maintained dialogue]

United States Information Technology Office (USITO) in Beijing, China

TIA is a Parent Member with a Board seat itself, and three company seats:

Sean Murphy, *Qualcomm*

Jeff Moon, *Cisco*

Richard Brecher, *Motorola Solutions*



TIA Standards Program

TIA IS ACCREDITED BY THE AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI) to develop voluntary, consensus industry standards for a wide variety of communications products and systems. TIA creates specifications for machine-to-machine communications, cellular towers, wind towers, data centers, network cabling, public safety radio equipment, data terminals, satellites, telephone terminal equipment, accessibility, VoIP equipment, mobile device communications, multimedia multicast, vehicular telematics, and smart utility networks, among others.

▶ **MORE THAN 20 YEARS ANSI ACCREDITATION**

▶ **12 PRODUCT-ORIENTED ENGINEERING COMMITTEES**, consisting of:

- 80+ subcommittees and working groups;
- Representatives from manufacturers, service providers, consultants, and end users, including federal, state and local government.

▶ **SECRETARIAT** to groups that develop international standards, such as Third Generation Partnership Project 2 (3GPP2), oneM2M, and Technical Advisory Groups (TAGs) for forums such as IEC, ISO, and JTC-1.

▶ **NEW FOCUS GROUPS AND WORKSHOPS**

ENGINEERING COMMITTEES

TR-8: Mobile and Personal Private Radio Standards

TR-14: Structural Standards for Communication and Small Wind Turbine Support Structures

TR-30: Multi-Media Access, Protocols and Interfaces

TR-34: Satellite Equipment and Systems

TR-41: Performance and Accessibility for Communications Products

TR-42: Telecommunications Cabling Systems

TR-45: Mobile and Point-to-Point Communications Standards

TR-47: Terrestrial Mobile Multimedia Multicast

TR-48: Vehicular Telematics

TR-49: eHealthcare ICT

TR-50: M2M-Smart Device Communications

TR-51: Smart Utility Networks

TIMELY, COST-EFFECTIVENESS STANDARDS

DEVELOPMENT PROCESSES that are open, transparent, fair, and nondiscriminatory to find technical solutions to communications needs.

PRIVATE SECTOR SOLUTIONS AND SUSTAINABILITY

WORK WITH TIA POLICY TO:

- ▶ Identify opportunities for the standards process to address technology issues with legislators and government entities.
- ▶ Promote government participation in the standards process as experts and end users.
- ▶ Provide assistance to trade officials to resolve standards-related and other technical barriers to trade.

SUSTAINABILITY



In cooperation with CompTIA, InfoComm, and the Communications

Cable & Connectivity Association, TIA launched the standards development process of the **Sustainable Technology Environments Program (STEP)**. This effort will bring sustainability to the process of planning, designing, integrating and operating technology systems. Technology is part of the solution to the future's economy, and STEP will play an important role in coordinating and enhancing the benefits that technological innovation brings to the built environment.

For more information go to tiaonline.org/step or contact standards@tiaonline.org.

Learn more about TIA's standards activities at tiaonline.org/standards.



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For more information on speakers and updates on TIA's 16th Annual Spring Policy Summit, please visit our website, tiaonline.org or contact David Gray, +1.703.907.7710, dgray@tiaonline.org.



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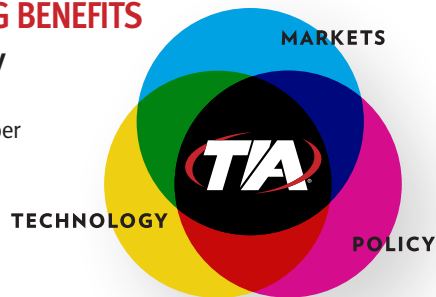
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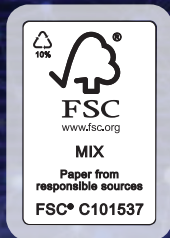
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